**IN THE DRAWINGS:**

Further to the objection to the drawings in the Office Action, attached is a replacement sheet.

## REMARKS

The Office Action dated June 1, 2005 has been received and carefully noted. The following remarks, are submitted as a full and complete response thereto. Claims 2-7 have been allowed. Claim 1 is submitted for consideration.

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include reference sign 351 disclosed in the description page 6, line 176. A corrected drawing sheet in compliance with 37 CFR 1.21(d) is attached to this Response. Therefore, Applicants respectfully request that this objection be withdrawn.

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in figure 1 (AAPA) in view of U.S. Patent 5,351,016 to Dent. The Office Action states that the AAPA teaches generating a first quadrature data symbol, generating a second quadrature data symbol, generating a first in-phase data symbol and a second in-phase data symbol. However, according to the Office Action, figure 1 does not teach compensating the first and second quadrature symbols and the first and second in-phase data symbol based on alpha, epsilon and gain respectively. The Office Action uses Dent to cure these deficiencies in order to yield the claimed invention as recited in claim 1. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claim 1.

Claim 1 recites a method for providing a data symbol having a first quadrature compensated data symbol (FQCDS), a second quadrature compensated data symbol (SQCDS), a first in-phase compensated data symbol (FICDS) and a second in-phase compensated data symbol (SICDS) to an inverse fast fourrier transform (IFFT) of a multicarrier quadrature modulator having an amplifier. A first subcarrier data symbol and a second subcarrier data symbol are available from a mapper and an alpha, an epsilon, and a gain are predetermined. The alpha, epsilon and gain are imbalance parameters. The method includes the steps of first quadrature compensating the data symbol based on the alpha, epsilon and gain to produce the FQCDS and second quadrature compensating the data symbol based on the alpha, epsilon and gain to produce the SQCDS. The method also includes the steps of first in-phase compensating the data symbol based on the alpha, epsilon and gain to produce the FICDS and second in-phase compensating the data symbol based on the alpha, epsilon and gain to produce the SICDS.

As will be discussed below, the cited prior art reference of Dent fails to disclose or suggest the elements of any of the presently pending claims.

Dent teaches that a carrier imbalance can be taken into account simply by subtracting from I and Q constants equal to the amount of carrier imbalance to be corrected. The correction factors are determined by sampling the modulator output waveform with a modulation assessment receiver and communicating the samples to a

digital signal processor for generating I and Q modulations and performing the pre-corrections. Col. 7, line 61-Col. 8, line 12.

Applicant submits that the combination of the AAPA and Dent simply does not teach or suggest the combination of features clearly recited in claim 1. The Office Action states that the AAPA teaches generating a first quadrature data symbol, generating a second quadrature data symbol, generating a first in-phase data symbol and a second in-phase data symbol. The Office Action acknowledges that figure 1 does not teach compensating the first and second quadrature symbols and the first and second in-phase data symbol based on alpha, epsilon and gain respectively. Applicant submits that Dent does not cure the deficiencies of the AAPA.

Dent specifies what kind of coefficients must be used for amplifying and crosstalking I and Q signals. As is known to those skilled in the art, in a multicarrier system this would be call a time domain signal. The present invention also specifies the kind of coefficients that must be used for amplifying and crosstalking two QAM symbols that modulate carriers. As is known to those skilled in the art, in multicarrier systems, these QAM symbols are called frequency domain signal. Applicant submits that the coefficients of Dent and the present invention are in fact different coefficients. In fact, the coefficients of the present invention have totally different physical meaning from the coefficients of Dent. Both the coefficients in the present invention and in Dent must be derived mathematically, wherein the derivation of coefficients of the present invention is different from the derivation of the coefficients of Dent. Thus, in the present invention,

the location of predistortion unit in the transmitter is different from the teachings of Dent (before IFFT vs. after IFFT). Hence, the coefficients for predistortion in the present invention are different from those taught in Dent and the signals being distorted in the present invention are different from those disclosed in Dent.

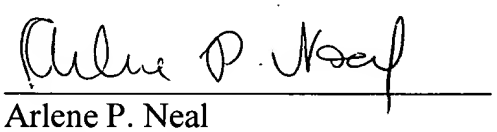
Furthermore, Applicant submits that the reason why Dent does not show the IFFT block is that multicarrier systems (OFDM) were not considered by Dent. If Dent had disclosed the IFFT block, it would have been the block where the "information signal" arrow is coming from in figure 3 of Dent. In fact the only thing that is common in the present invention and Dent is that both the present invention, as recited in claim 1, and Dent use some sort of cross talk to compensate for imbalance. However, Dent teaches how signals before DA conversion must be "distorted" by applying gain and crosstalk. Dent's method may be used with any system. On the other hand, the present invention, as recited in claim 1, can only be used with multicarrier modulation systems using IFFT which is not disclosed or suggested by the teachings of Dent. Claim 1 recites, in part, a method for providing a data symbol having a first quadrature compensated data symbol (FQCDS), a second quadrature compensated data symbol (SQCDS), a first in-phase compensated data symbol (FICDS) and a second in-phase compensated data symbol (SICDS) **to an inverse fast fourrier transform (IFFT) of a multicarrier quadrature modulator** having an amplifier, a first **subcarrier data** symbol and a second **subcarrier data** symbol are available from a mapper and an alpha, an epsilon, and a gain are predetermined. Based on the recitation of claim 1 and the teachings of Dent, one of

ordinary skill with multicarrier modulation schemes would clearly see that the teachings of Dent is different from the elements recited in claim 1. Therefore, Applicant requests that this rejection be withdrawn and that all of claims 1-7 be allowed.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosure: Replacement Sheet Drawing